



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/548,910	04/13/2000	Brian M. Bass	RAL9-00-0014	7797

25299 7590 03/31/2004

IBM CORPORATION
PO BOX 12195
DEPT 9CCA, BLDG 002
RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

PHUNKULH, BOB A

ART UNIT	PAPER NUMBER
----------	--------------

2661

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/548,910		BASS ET AL.	
	Examiner		Art Unit	
	Bob A. Phunkulh		2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-15 is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2661

DETAILED ACTION

This communication is in response to applicant's 01/16/2004 amendment/responses in the application of **Bass et al.** for "**Method and System for Network Processor Scheduling Outputs Based on Multiple Calendars**" filed 04/13/2000. The amendments/response to the claims have been entered. No claims have been canceled. Claims 3-15 have been added. Claims 1-15 are now pending.

Claim Objections

Claim 2 is objected to because of the following informalities: please correct the subject matter "printers" in line 13 to --pointers--. Also, please correct "selecting one of the **queues** to service" to --selecting one of the **calendar** to service--. Appropriate correction is required.

Claim 4 is objected to because of the following informalities: please correct the subject matter "third time-based calendar" in line 2 to --third time-independent calendar. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2661

Claims 3-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 3, it is not clear what it meant by "whereat an indicia identifying a source providing said single information unit is placed" as cited in the claim.

Regarding claim 4, it is not clear what it meant by "wherein the first time-based calendar, the second time-based calendar and the third time-based calendar each includes n related calendars, $n > 1$, with each one of the n related calendars having m partitions, $m > 1$ " as cited in the claim i.e. each calendar includes n or m calendars? Or each calendar further comprises of m or n calendars? Also, the there is no third time-based calendar cited in the preceding claim.

Claims 4-8 are rejected for dependent of the rejected claim.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Art Unit: 2661

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 2 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of copending Application No. 09/548,912. Although the conflicting claims are not identical, they are not patentably distinct from each other because elimination of an element and its function provides no patentable difference. It is well settled that elimination of elements and their function is considered to be obvious to one of ordinary skill in the art at. In re Karlson, 453 USPQ 184 (CCPA 1963).

The scope of the claim is broader than the scope of the claim in copending application where the limitation "said selection from a weighted fair queue including calculating a new position in the weighted fair queue based on the size of the packet and the weighting factor for the information unit selected" is omitted in the instant claim.

Claim 2 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of copending Application No. 09/548,907. Although the conflicting claims are not identical, they are not patentably distinct from each other because elimination of an element and its function provides no patentable difference. It is well settled that elimination of elements and their function is considered to be obvious to one of ordinary skill in the art at. In re Karlson, 453 USPQ 184 (CCPA 1963).

Art Unit: 2661

The scope of the claim is broader than the scope of the claim in copending application where the limitation sending from "one processor" to the network is omitted in the instant claim.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Hughes et al. (US 5,835,494), hereinafter Hughes.

Regarding claim 2, Hughes discloses a method of selecting during any processing cycle one processed information unit from a plurality of information units ready at that time for transmission from a network processor toward a data transmission network, the method comprising:

receiving priority information about each of the information units ready for processing (**see figure 1 and col. 4 lines 49-57**);

placing pointers identifying queues with each information unit ready for transmission into at least one slot on one of several prioritized calendars based on the priority information associated with each information unit, wherein at least one of the

Art Unit: 2661

calendar being time-based (*higher granularity calendar*) and an other one of the calendars queues being time independent (*lower granularity calendars*, **see figures 1 and 2 and see col. 6 lines 52-67**);

selecting one of the calendar to service at each time cycle based on a stored set of rules including location of slot storing the printers identify in a queues and selecting one of the information units from the selected queue according to an algorithm; and sending the selected information unit to the network (**see col. 3 lines 9-24**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pillar et al. (US 6,438,106), hereinafter Pillar, in view of Sterne et al. (US 5,818,839), hereinafter Sterne.

Regarding claim 1, Pillar discloses an apparatus for periodically moving information units from a plurality of sources to an output destination based on information stored about each of the plurality of sources, the apparatus comprising:

-a first time-based calendar which handles some of the information units based on the information stored about the plurality of sources (*CSO connection schedulers*

Art Unit: 2661

servers real-time ATM class or time-based, see figures 1 and 5 and col. 5 lines

33-35);

-a second time-based calendar which handles other of the information units based on the information stored about the plurality of sources (*CSI connection schedulers servers real-time ATM class or time-based, see figures 1 and 5 and col. 5 lines 33-35*);

-a third calendar which is time-independent which handles other of the information units based on information stored about the plurality of sources (*CS3 connection schedulers servers non- real-time ATM class or time-independent, see figures 1 and 5 and col. 5 lines 33-35*); and

-a fourth calendar which handles information units based on limiting peak burst rate, providing a scheduling delay when the peak burst rate exceeds a calculated value (the GCRA-PGQ scheduler monitors outgoing traffic (*cells being transmitted to the link*) for each of a plurality of classes. If the scheduler detects that traffic for a given class exceeds predetermined GCRA-measured limits (*such as, for example, excessively "bursty" traffic that exceeds the peak rate and/or burst tolerance of the GCRA*), the scheduler reduces the priority accorded to that class, until the traffic for that class returns to a value within the GCRA-measured limits, **see col. 6 lines 59-67**).

Pillar is silent on the apparatus further comprises of a timer which periodically generates a signal which moves a single information unit to the output destination, with the single information unit chosen based on stored rules. It should be noted that it is

Art Unit: 2661

well known in the art to provide a timing reference or cycle in a scheduling device for determining timing reference.

Sterne, on the other hand, teaches a scheduling apparatus comprises of a timer **(clock selection device 20 in figure 2 and master clock 42 in figure 3)** which periodically generates a signal which moves a single information unit to the output destination, with the single information unit chosen based on stored rules **(see figures 1-3 and col. 1 line 50-67; and col. 2 lines 12-30)**.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made to provides the timer, for generating a timing signal, of Sterne in the scheduling apparatus taught by Pillar for providing the apparatus with a reference signal for traffic shaping or scheduling ATM cells from various schedulers or calendars to a single output -thus the scheduling apparatus ensures that the traffic conforms to the specified parameters for each flow.

Allowable Subject Matter

Claims 10-15 are allowed.

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed 1/16/2004 have been fully considered but they are not persuasive.

In page 12, the applicant argued the following:

In response, applicants respectfully disagree with the Examiner and argue that the Examiner's conclusion that Pillar (U.S. Patent 6,438,106) teaches the calendar type as set forth in applicants' claim 1 appears to be in error, ***In particular, applicants argue Pillar does not show or suggest calendar for scheduling much less partitioning the calendar into different types as set forth in applicants' claim.*** The Pillar reference in Figures 1 and 5 discloses high priority connection schedulers and low priority connection scheduler. See column 5, lines 30-35, and column 6, lines 59-77. However, the reference does not define or identify what these connection schedulers may be. Moreover, ***the Examiner has not shown any art that identifies different types of calendars which can be used for scheduling asset forth in claim 1.*** Failure of the primary reference to identify the scheduler type and failure of the Examiner to identify art that provides the scheduler type as set forth in applicants' claim 1 suggest that the Examiner is relying on the teaching of applicants' disclosure to form the combination. Reliance on an applicants' disclosure to form a combination to render applicants' claim obvious is and has always been prohibited. As a consequence the Examiner has not proffered a prima facie case of obviousness, as required by statute. Therefore, claim 1 is not obvious.

In response to the above argument, claim 1 does not have the limitation

"calendar for scheduling much less partitioning the calendar into different type" in

the original or amended claim. Also, Pillar discloses a plurality of connection

schedulers for scheduling the ATM cells. Pillar discloses a *CS0 connection*

schedulers servers real-time ATM class or time-based, see figures 1 and 5 and col. 5

lines 33-35 (a first time-based calendar which handles some of the information units

based on the information stored about the plurality of sources);

CS1 connection schedulers servers real-time ATM class or time-based, see

figures 1 and 5 and col. 5 lines 33-35 (second time-based calendar which handles

other of the information units based on the information stored about the plurality of

sources);

Art Unit: 2661

CS3 connection schedulers servers non- real-time ATM class or time-independent, see figures 1 and 5 and col. 5 lines 33-35) (a third calendar which is time-independent which handles other of the information units based on information stored about the plurality of sources); and

a GCRA-PGQ scheduler monitors outgoing traffic cells being transmitted to the link for each of a plurality of classes; if the scheduler detects that traffic for a given class exceeds predetermined GCRA-measured limits such as, for example, excessively "bursty" traffic that exceeds the peak rate and/or burst tolerance of the GCRA, the scheduler reduces the priority accorded to that class, until the traffic for that class returns to a value within the GCRA-measured limits, **see col. 6 lines 59-67** *(a fourth calendar which handles information units based on limiting peak burst rate, providing a scheduling delay when the peak burst rate exceeds a calculated value).*

In page 12, the applicant argued the following:

applicants argue that there is not teaching in the reference that suggests the fourth calendar as set forth in applicants' claim.

In response to the applicant's argument,

In col. 6 lines 29-67 discloses the GCRA-PGQ scheduler monitors outgoing traffic cells being transmitted to the link for each of a plurality of classes. If the scheduler detects that traffic for a given class exceeds predetermined GCRA-measured limits such as, for example, excessively "bursty" traffic that exceeds the peak rate and/or burst tolerance of the GCRA, **the scheduler reduces the priority accorded to that**

Art Unit: 2661

class, until the traffic for that class returns to a value within the GCRA-measured limits, **see col. 6 lines 59-67** –thus Pillar discloses *the fourth calendar which handles information units based on limiting peak burst rate, providing a scheduling delay when the peak burst rate exceeds a calculated value.*

In page 13, the applicant argued the following:

In addition, applicants argue the Examiner's combination between U.S. Patent 6,438,106 and 5,818,839 is improper in that there is no basis in the reference for the combination.

In response to the above argument, Pillar discloses a scheduler uses a schedule "time interval" when servicing the ATM cells (see col. 6 line 14-19). If a common timing is used for a plurality of schedulers, this ensures that the traffic conforms to the specified parameters for each particular stream which leads to better overall network performance (see col. 1 lines 31-42 of Sterne).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2661

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314, (for formal communications; please mark "EXPEDITED
PROCEDURE")

Or:

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal
Drive, Arlington, VA., Sixth Floor (Receptionist).

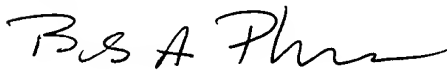
Art Unit: 2661

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(703) 308-8251**. The examiner can normally be reached on Monday-Friday from 7:00 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor **Douglas W. Olms**, can be reach on **(703) 305-4703**. The fax phone number for this group is **(703) 872-9314**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bob A. Phunkulh



March 29, 2004

T.C. 2600

Art Unit 2661